CLAIMS

1. A rehabilitation chair system, comprising:

    a seat adapted for sitting of a human thereon;

    at least one extender adapted to move relative to said seat;

    at least one sensor which generates an indication of a balance state of said human; and

    a controller configured to move said extender while measuring said balance state using said at least one sensor.

2.   A system according to claim 1, wherein said extender is mechanically coupled to said seat.

3.   A system according to claim 1, wherein said controller moves said extender responsive to said balance state.

4.   A system according to claim 1, wherein said controller moves said extender and measures a responsive change in balance state.

5.   A system according to claim 1, wherein said seat is adapted to rotate out of plane of the seat.

6.   A system according to claim 1 wherein said seat comprises a back.

7.   A system according to claim 6, wherein said back is articulated.

8.   A system according to claim 6, wherein said back rotates around a vertical axis thereof.

9.   A system according to claim 1, wherein said seat is adapted to resist said rotating thereof.

10.   A system according to claim 1, wherein said seat is adapted to lift under power at least 10 cm.

11.   A system according to claim 1, comprising at least one leg mover adapted to lift at least one leg of the human from a floor on which the leg rests.

5   12.   A system according to claim 11, comprising at least a second leg mover adapted to lift at least a second leg from said floor.

13.   A system according to claim 12, wherein said leg movers are adapted to be locked together.

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14.   A system according to claim 12, wherein said leg movers are separately movable.

15.   A system according to claim 1, wherein said at least one balance sensor comprises at least one pressure mat for a foot of the human.

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16.   A system according to claim 1, wherein said at least one sensor comprises at least one pressure sensor for an armrest of said chair.

17.   A system according to claim 1, wherein said at least one sensor comprises at least one
20   pressure sensor positioned on the seat for a buttock.

18.   A system according to claim 1, wherein said at least one sensor comprises at least one pressure sensor positioned to be placed on a table near said chair.

25   19.   A system according to claim 1, wherein said at least one sensor comprises at least two pressure sensors symmetrically positioned relative to a person sitting in the chair.

20.   A system according to claim 1, wherein said at least one sensor comprises at least four spatially separated pressure sensors.

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21.   A system according to claim 1, wherein said controller drives said extendor according to a rehabilitation plan stored within the controller.

22.   A system according to claim 1, wherein said controller drives said seat according to a rehabilitation plan stored within the controller.

23.   A rehabilitation system comprising:

a joint having a common center of rotation for rotation (Phi) and elevation (Theta) angles;

a seat mounted on said joint; and

a controller adapted to perform at least one of: drive said seat and measure a rotation of said seat, according to a rehabilitation plan.

24.   A rehabilitation system comprising:

a chair adapted for sitting of a human thereon;

a leg lift mechanism adapted to lift at least one leg of a human sitting on the chair; and

a controller adapted to control the lift mechanism to repeatedly lift the at least one leg of the human, such that a spine of the human is manipulated.

25.   A method of rehabilitation of a person, comprising:

sitting the person in a chair coupled to a robotic assistance device; and

performing, with robotic assistance of said device, at least one rehabilitation exercise on said person, said exercise designed to rehabilitate balance, said robotic assistance including at least one of providing motive force by said robotic assistance and providing an obstruction to motion by said robotic assistance.

26.   A method according to claim 25, wherein said exercise comprises reaching one or more hands.

27.   A method according to claim 25, wherein said exercise comprises lifting and placing an object.

28.   A method according to claim 25, wherein said exercise comprises a manipulation of hands extended away from the body.

29.   A method according to claim 25, wherein said exercise comprises an interactive

exercise with feedback as the complexity of the exercise increases.

30.   A method according to claim 25, wherein said performing comprises monitoring a plurality of body parts.

31.   A method according to claim 25, comprising monitoring a balance between body sides of the person while performing the exercise.

32.   A method according to claim 25, comprising monitoring positions of an organ of the person and analyzing the positions to determine an assistance of the organ to a balance of the person.

33.   A method according to claim 32, wherein the organ comprises an arm.

34.   A method according to claim 32, wherein the organ comprises a torso.

35.   A method according to claim 32, wherein the organ comprises a leg.

36.   A method according to claim 32, wherein monitoring positions of the organ comprises monitoring movements of the organ.

37.   A method according to claim 32, wherein monitoring positions of the organ comprises monitoring resistance of the organ to motion of another body part.

38.   A method according to claim 25, wherein said robotic assistance comprises moving a body part.

39.   A method according to claim 25, wherein said robotic assistance comprises resisting the motion of a body part.

40.   A method according to claim 25, wherein said robotic assistance comprises preventing loss of balance.

41.   A method according to claim 25, wherein said robotic assistance comprises inducing loss of balance.

42.   A method according to claim 25, wherein said exercise comprises standing up.

43.   A method according to claim 42, wherein said robotic assistance lifts said person.

44.   A method according to claim 25, wherein said exercise comprises torso training.

45. A method of balance rehabilitation comprises:

performing by a person a task requiring balancing; and

monitoring a performance of said task by measuring forces at a plurality of spatially separate load areas on which the person applies force, including at least one load area other than a foot.